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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,307	08/29/2006	Stefan Schafer	SCHAFER, S. ET AL-2 PCT	4534
25889 7590 11/17/2009 COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576				
EXAMINER MENON, KRISHNAN S				
ART UNIT		PAPER NUMBER		
1797				
MAIL DATE		DELIVERY MODE		
11/17/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/587,307

**Applicant(s)**

SCHAFFER ET AL.

**Examiner**

Krishnan S. Menon

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 1 and 17-20 are pending as amended 10-5-09.

#### ***Claim Rejections - 35 USC § 102/103***

1. Claims 1 and 17-20 are rejected under 35 USC 103(a) as being obvious over, Shibata et al (US 4,902,419) or Geleff et al (US 5,840,230), or Mahendran et al (US 6,294,039), in view of Crowley (US 3,708,071)

Fig 2 of Shibata is copied herein. As is distinctly clear, Shibata has tubular porous membranes (1), which are in the hollow fiber range because it has diameter of 3 mm (C3, L20-25), inserted through a spacer layer (2) and protrudes through an adhesive layer (6), and are open above this adhesive layer. The question of "protruding outside the adhesive layer" is debatable – tubes (1) appear to be in flush with the adhesive layer (6), but it some degree of protrusion must be there to prevent the adhesive from flowing into the tubes. Thus, making the tubes protrude would be obvious, if not anticipated.

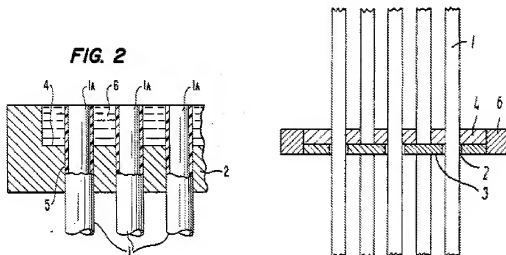


Figure 2 of Shibata is to the left; Fig 1 of Geleff to the right.

Also, hollow fibers are tubular, and thus a recitation of hollow fiber would not be distinguishable over a teaching of tubular membranes.

Figure 1 of Geleff is also shown herein. Hollow fibers (1) are inserted through perforated plate 3 and then the potting compound (4) is filled in. The reference teaches (abstract) removing the plate after the potting compound cures, but the claims are anticipated by the intermediate product at the stage of the cured potting compound.

Mahendran teaches (Fig 2, shown below, with descriptive details starting at C8, L 47) a spacer layer of flexible spacer material, powdered salt or PEG wax is filled up to L1, above layer 15, and then potting compound above it up to level L2 and optionally a cushioning material is then filled up to level L3. Thus, Mahendran has the spacer, and above it the potting material, etc., and the tubes protrude on both sides of the spacer. Thus Mahendran anticipates the claims.

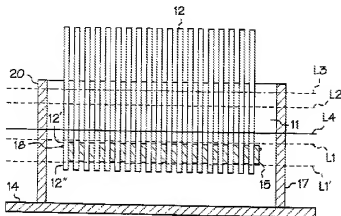


FIG. 2

Claim 1 differs from the teachings of these references in the specificity of the material of the porous plate being elastomeric. However, this does not appear to be critical from applicant's disclosure (page 6). The disclosure only states:

material is applied to the top of the spacer. The perforated plate can consist of metal or plastic or an elastomer material, for example.

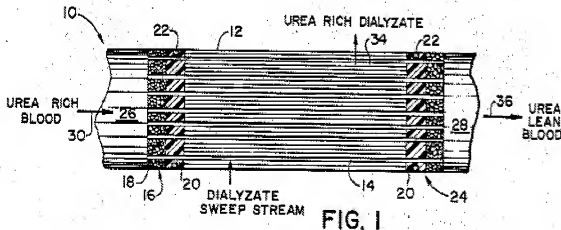
Crowley teaches using an elastomeric material for a sealing plate as discussed below. Crowley teaches selecting the material to have shock resistance and ease of handling - column 3, lines 30-35. It would be obvious to one of ordinary skill in the art to use a material that is soft for the protection of the hollow fibers as taught by Crowley.

Regarding the additional limitations of the collar, permeate collection space, pipe socket, etc., Geleff and Shibata teach such collars. All references teach or at least imply pipe connections which are necessary for connecting pipes to the module to provide inlets and outlets to the various flow streams.

**2. Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Crowley (US 3,708,071).**

Crowley teaches a hollow fiber membrane unit having a bundle of hollow fibers (14) inserted through a porous plate (20) with foam layer (16,24) – see column 7, lines 10-25. The porous plate is elastomeric – see column 7, lines 60-67.

The porous plate is formed by pouring a solidifiable resin between the interstices of the hollow fibers; however, it would solidify into an elastomer plate with holes enclose the capillary membranes without a gap.



***Response to Arguments***

Applicant's arguments filed 10/5/09 have been fully considered but they are not persuasive.

The argument that the references teach hard materials such as a metal or plastic, whereas applicant provides an elastomeric material for protecting the hollow fibers is not persuasive. First of all, there is no disclosure about any such concern that the

hollow fibers need be so protected; secondly, it is a well known fact and taught by the references that hollow fibers need such protection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on 571-272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Krishnan S Menon/  
Primary Examiner, Art Unit 1797